

Applicants : Simon Piers Robinson
Serial No. : 10/619,646
Filed : July 15, 2003
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-54. (Canceled)

55. (Previously Presented) An isolated nucleic acid molecule that encodes a PPO polypeptide of lettuce comprising:

- (i) the nucleotide sequence set forth in SEQ ID NO: 29;
- (ii) a nucleotide sequence that encodes the amino acid sequence set forth in SEQ ID NO: 30;
- (iii) a nucleotide sequence that encodes a copper-binding site of the amino acid sequence of (ii); or
- (iv) the nucleotide sequence that is complementary to (i) or (ii) or (iii).

56. (Currently Amended) The isolated nucleic acid molecule of claim 55, comprising:

- (i) the nucleotide sequence set forth in SEQ ID NO: 29;
- (ii) a nucleotide sequence that encodes the amino acid sequence set forth in SEQ ID NO: 30; or
- (iii) the nucleotide sequence that is complementary to (i) or (ii).

57. (Previously Presented) A recombinant vector comprising a nucleic acid molecule comprising:

- (i) the nucleotide sequence set forth in SEQ ID NO: 29;

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- (ii) a nucleotide sequence that encodes the amino acid sequence set forth in SEQ ID NO: 30;
- (iii) a nucleotide sequence that encodes a copper-binding site of the amino acid sequence of (ii); or
- (iv) the nucleotide sequence that is complementary to (i) or (ii) or (iii), within the vector molecule.

58. (Previously Presented) The recombinant vector of claim 57 wherein the vector is a plasmid expression vector.

59. (Previously Presented) The recombinant vector of claim 58 wherein the plasmid expression vector is Bluescript SK+.

60. (Previously Presented) The recombinant vector of claim 57, wherein the vector is a binary vector suitable for introducing into a plant cell, tissue or organ.

61. (Previously Presented) The recombinant vector of claim 57, wherein the vector is capable of being replicated and the PPO-encoding nucleic acid is capable of being transcribed and translated in a unicellular organism or in a plant.

62-72. (Canceled)

73. (Previously Presented) A method of increasing the level of PPO activity in a plant, cell, tissue or organ thereof, the method comprising:

- (a) introducing into the plant, cell, tissue or organ thereof a nucleic acid molecule encoding PPO

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polypeptide of lettuce comprising:

- (i) the nucleotide sequence set forth in SEQ ID NO: 29;
- (ii) a nucleotide sequence that encodes the amino acid sequence set forth in SEQ ID NO: 30;
- (iii) a nucleotide sequence that encodes a copper-binding site of the amino acid sequence of (ii), and
- (b) expressing the nucleic acid molecule to produce an enzymatically-active PPO polypeptide.

74. (Previously Presented) A method of decreasing the level of PPO activity in a lettuce plant, cell, tissue or organ thereof, the method comprising introducing a nucleic acid which hybridizes to a nucleic acid molecule in the lettuce plant, cell, tissue or organ thereof, comprising:

- (i) the nucleotide sequence set forth in SEQ ID NO: 29;
- (ii) a nucleotide sequence that encodes the amino acid sequence set forth in SEQ ID NO: 30;
- (iii) a nucleotide sequence that encodes a copper-binding site of the amino acid sequence of (ii); or
- (iv) the nucleotide sequence that is complementary to (i) or (ii) or (iii).